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(54) **Analogue-to-digital converter.**

(57) In a conventional sigma-delta analogue-to-digital converter an input such as an i.f. signal at i/p is converted to digital form by analogue-to-digital converter 9 at output o/p, and the quantising noise is shaped by means of a feedback loop which feeds a signal derived from the digital output to be combined in analogue form with the analogue input to form a difference signal for input to filter means 6, 7, the filtered difference signal being applied to the input of the analogue-to-digital converter 9. In the invention, to improve the signal-to-noise ratio, the analogue-to-digital converter 9 has more levels of quantisation than the digital-to-analogue converter 4 but the latter is clocked at a faster rate.

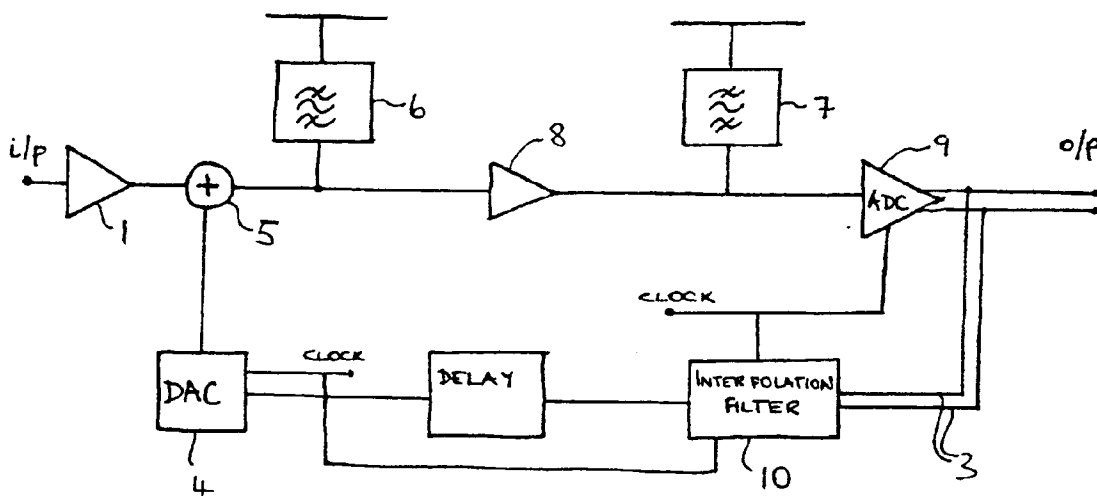


FIG 4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 92 31 0480

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	ELECTRONICS LETTERS, vol.24, no.4, August 1988, STEVENAGE, HERTS GB pages 1051 - 1052, XP000026960 LARSON ET AL 'multibit oversampled sigma-delta A/D convertor with digital error correction' * page 1051, column 2, line 2 - line 31 * see reference no. 3 (patented see us4593271) * page 1052, column 2 *	1,3	H03M1/12 H03M3/02
Y	IEEE TRANSACTIONS ON COMMUNICATIONS, vol.34, no.1, January 1986, NEW YORK, USA pages 77 - 81 CANDY ET AL 'Double Interpolation for Digital-to-analog Conversion' * the whole document *	1,3	
A	GB-A-2 171 569 (THE PLESSEY COMPANY) * the whole document *	1,3	TECHNICAL FIELDS SEARCHED (Int.Cl.5)
D,A	EP-A-0 399 738 (GEC-MARCONI) * the whole document *	1	H03M
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 April 1995	Examiner Guivol, Y
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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